MATERIAL SAFETY DATA SHEET

kuraray	**Kuraray Poval** **PVA-403, PVA-405, PVA-420, PVA-420H, PVA-422H, PVA-424H, PVA-505** Version: 03 Revised Date: 3/24/2008	**Kuraray America, Inc.** 2625 Bay Area Blvd, Suite 300, Houston, TX 77058 USA
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For Chemical Emergency Call-Day Or Night: **+1 - 713 - 495 - 7381**	**For MSDS Info:** **+1 - 713 - 495 - 7381**	

------ H M I S----------
Health 1
Flammability 1
Reactivity 0
Personal protection F

Section 01 - Product Identification

Trade name: **Kuraray Poval**
PVA-403, PVA-405, PVA-420, PVA-420H, PVA-422H, PVA-424H, PVA-505

CAS number: 25213-24-5
Chemical family: Polyvinyl alcohol
Primary product use: Additive for use in adhesives, paper processing agents, paints, lacquers, printing inks

Section 02 - Composition of the product

Chemical Name	CAS No.	Weight Percent
Polyvinyl alcohol - partially hydrolyzed	25213-24-5	> 94%
Methanol	67-56-1	< 1.5%
Methyl acetate	79-20-9	< 1%

Harzardous Ingredients:

Methanol

ACGIH	Threshold Limit Value (TLV):	200ppm (TWA), 250ppm (STEL)
OSHA	Permissible Exposure Limit (PEL):	200ppm (TWA), 250ppm (STEL)

Methyl Acetate

ACGIH	Threshold Limit Value (TLV):	200ppm (TWA), 250ppm (STEL)
OSHA	Permissible Exposure Limit (PEL):	200ppm (TWA)

Section 03 - Hazards Identification

Expected route of entry:

Skin contact	: Yes
Skin absorption	: Yes
Eye contact	: Yes
Inhalation	: Yes
Ingestion	: Yes

Effects of exposure:

Methanol

Poisoning is usually caused by ingestion. Poisoning by inhalation of vapor is uncommon but can occur at extreme levels of exposure. Intoxication by skin absorption is unlikely unless prolonged

contact occurs with injured skin. Acute systemic toxicity is manifested in acidosis and injury to the optic nerve. Onset of symptoms may be delayed as long as 30 hours. A latent period of 12-18 hours is common. Mild intoxication may be associated with non-specific headache, fatigue, nausea and blurring of vision, usually reversible. Moderate intoxication may produce severe headache, dizziness, nausea, vomiting, abdominal or lumbar pain and depression of the central nervous system. Blurring or loss of vision may be temporary to permanent and generally follows latent periods of two to six days. In severe intoxication, these findings are accentuated and there may be shock, coma and hyperemia of the optic disc with blurring of the disc margins. Acidosis is a prominent observation. Death has been reported in about 25% of patients with severe poisoning (carbon dioxide combining power less than 20 meg/l). Visual disturbances, the most damaging aspect of most cases of intoxication, may develop promptly with little warning. The loss of acuity may be accompanied by the perception of spots or a grey mist. Changes in color perception, scotomatia, photophobia or tenderness of the eyes. Prognosis for improvement of vision is poor if changes persist for 6 days. Chronic poisoning from inhalation has been described as showing visual impairment with blurring, loss of acuity, contraction of fields and sometimes total blindness. This condition is believed to be exceedingly rare and not well documented. Liquid and vapor may be irritating to the skin and mucous membranes. May have a defatting action upon the skin and dryness and vulnerability to infection may result.

Known effects on other illnesses:

Persons with pre-existing eye or skin disorders or impaired pulmonary function may be more susceptible to the effects of this product.

Listed carcinogen:

OSHA:	No
NTP:	No
IARC:	No
Other:	No

Section 04 - First Aid Measures

First aid for eyes:

Immediately flush eyes with running water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek prompt medical attention if redness or irritation occurs.

First aid for skin:

Wash thoroughly with soap and water for 15 minutes. If skin irritation occurs, seek medical attention.

First aid for inhalation:

Remove subject to fresh air. Seek medical aid if lung irritation persists or if breathing becomes difficult.

First aid for ingestion: Do not induce vomiting. Get immediate medical help.

Note to physician: None known

Section 05 - Fire Fighting Measures

Flash point: > 93 ^{o}C
Flammable limits: Lower Explosion Limit (LEL): unknown
Upper Explosion Limit (UEL): unknown

Auto ignition temperature: unknown

Hazardous combustion products: Thermal decomposition may produce oxides of carbon.

Extinguishing media:

Water:	Yes
Alcohol foam:	Yes
CO_2:	Yes
Dry chemical:	Yes
Water / fog spray:	Yes

Special fire fighting procedures:
Exercise caution when fighting any chemical fire. Use NIOSH approved self-contained breathing apparatus and full protective clothing.

Unusual fire and explosion hazards:
Organic dusts have potential to be explosive with static spark or flame initiation. Maintain good housekeeping for control of dust. Ground all containers when transferring to avoid static charges.

Section 06 - Accidental Release Measures

Steps to be taken in case of spill or leak:
Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent. Place in suitable container. Pick up dry – forms slippery surface with water. Do not allow to contaminate water sources, sewers or soil.

Section 07 - Handling And Storage

Handling and storage information:
Avoid dust formation. In closed containers, due to the development of heat, vapors from methanol and methyl acetate could collect in the headspace of the containers therefore keep containers closed and away from open fires. Lead off electrostatic charges.

Section 08 - Exposure Controls / Personal Protection

Respiratory protection:
If airborne concentrations pose a health hazard, become irritating, or exceed recommended limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements under 29 CFR 1910.134.

Protective gloves: Rubber or plastic

Eye protection: Safety glasses with side shields.

Other protective equipment: Clothing suitable to prevent skin contact.

Ventilation:
Work area must be well ventilated to maintain dust concentration below TLY. Local exhaust ventilation is required.

Exposure limits: None on product

IDLH (immediately dangerous to life or health concentration): Not determined

Section 09 - Physical and Chemical Properties

Appearance and odor:	White to pale yellow, odorless, powder to fine granules
pH (4 % in water):	4.5 - 7
Solubility in water:	Soluble
Specific gravity:	1.25-1.35 at 20 ^{o}C
Boiling point:	Not available
Melting point:	200 – 230 ^{o}C
Density:	Approx. 1.3 g/cm^{3} at 20 ^{o}C
Bulk density:	400 - 600 kg/m^{3}
Decomposition temperature:	Approx. 160 ^{o}C

Section 10 - Stability And Reactivity

Stability:	Stable
Conditions to avoid:	Not known
Hazardous polymerization:	Will not occur
Incompatibility:	Strong oxidizing agents

Section 11 - Toxicological Information

LD50 (oral-rat):	Not available
Dermal irritation-rabbit:	Not available
Eye irritation-rabbit:	Not available

Other toxicological values:
Based on similar product testing this product is expected to be non-irritating to skin and eyes and have oral (rat) LD50 >2000 mg/kg.

Section 12 - Ecological Information

Eco-toxicity:	The product is not expected to be hazardous to the environment.
Biodegradation:	Expected to be biodegradable in aqueous solution
Fish toxicity:	LC50 > 5000 mg/l (96 hours, Zebra fish)

Chemical oxygen demand: Approx. 1600 mg/g

Section 13 - Disposal Considerations

Waste disposal information:
Disposal of waste product may be subject to federal, state, and local regulations. Refer to part 261 of 40 CFR for the applicability of federal regulations. Disposal of this material must be in a manner compliant with all federal, state and local regulations.

RCRA hazardous waste: No -- not as sold.
RCRA number: None

Section 14 - Transport Information

DOT: Not regulated

IATA: Not regulated

IMDG: Not regulated

Section 15 - Regulatory Information

TSCA: All components of this product are on the list.

SARA (Section 311/312):
Reactive hazard: No
Pressure hazard: No
Fire hazard: No
Immediate/acute: Yes
Delayed/chronic: No

SARA (Section 302):
Contains an extremely hazardous substance: No

SARA (Section 313 - toxic chemical):
This product contains toxic chemical(s) subject to the reporting requirements of section 313 of the emergency planning and community right-to-know act of 1986 and 40 CFR 372. Any such toxic chemical(s) are shown below.

Chemical Name	CAS No.	Weight Percent
Methanol	67-56-1	< 1.5%

Clean Water Act - Priority Pollutants:
Contains no known priority pollutants at concentrations greater than 0.1%.

Clean Air Act - Volatile Organic Compounds:

Content of VOC: < 1.5 wt. %
Method: Measured

CERCLA regulated components:

Chemical Name	CAS No.	Weight Percent	RQ
Methanol	67-56-1	< 1.5%	5000 lbs

FDA:
Subject to limitations, please take contact with Kuraray America, Inc. for further information.

Section 16 - Other Information

Other precautions:
Observe all necessary precautions for handling powders as fine powder may present dust explosion hazard.

ACGIH (TLY) for particulate matter: 10 mg/m^3 inhalable particulate
3 mg/m^3 respirable particulate

OSHA permissible exposure limit (PEL) for particulate matter:
15 mg/m^3 total dust
5 mg/m^3 respirable fraction

In accordance with good practices of personal cleanliness and hygiene, handle with due care and avoid unnecessary contact with this product. This information is being supplied to you under OSHA "right to know" regulation 29 CFR 1910.1200 and is offered in good faith as typical values and not as a product specification. The information contained herein is based on data available to US and is believed to be true and accurate. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof, is made. Kuraray America, inc. assumes no responsibility for damage or injury from the use of the product described herein.

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